Types of Vessels Which Tell the Story of Steam Navigation in the Hundred Years Since Fulton's Boat Made Her First Totp on the Hudson, Five Miles an Hour.

It will be one hundred years on August 7 next since the Clermont, the first practirai steam vessel, made her maiden voyage from New York to Albany. This vessel proceeded without stopping from New York to Clermont, the home of Robert Livingsten, who was helping Robert Fulton, the builder of the Clermont. The distance was 110 miles. After a stop of twenty hours she proceeded to Albany.

Then she went back to New York and made the trip in thirty hours, at an average speed of five miles an hour. In less than a month the Clermont was plying regularly between New York and Albany and estab lished the practicability of steam vessels

The Clermont was 136 feet long, 18 feet broad, 7 feet deep and of 180 tons displacement. The diameter of her wheels was

In one hundred years the steamship has very nearly driven the sailing vessel off the seas. When Fulton first suggested the idea he was laughed at.

When it was suggested that steamships would cross the western ocean the idea was said to be senseless and before the Savannah, the vessel first to cross using steam, made her trip eminent engineers said that no vessel could be built large enough to carry the necessary amount of fuel. The Savannah made her first trip in twenty-five days, and she used sails when the winds were favorable. Clipper ships crossed in less than half that time, and now if a hurried traveller does not get to the other side in less than six days he

is disappointed. To grasp the advance made in the century compare the Clermont with the Lusitania, the big turbine driven vessel of the Cunard Line, which will make her first voyage across the ocean early this summer. vessel is the largest of all ocean steamships.

She measures 790 feet from end to end. Her beam is 88 feet. She displaces 45,000 tons and her turbine engines will develop about 70,000 horse power, which it is expected will drive the vessel at the rate of 25 nautical miles an hour.

At this speed she will make the trip from Queenstown to this port, which is about 2.800 miles, in 4 days 16 hours. The fastest trip hitherto made was by the Lucania, 5 days 7 hours 23 minutes. She will make the trip to Plymouth, 2,990 miles, in about 4 days 23 hours. The Deutschland made that journey in 5 days 7 hours 88 minutes. The Lusitania is to make 25 nautical

miles, or 28.78 statute miles, an hour. The Clermont for thirty hours averaged five miles. There have been steam vessels of about the same size as the Clermont that have made between 35 and 40 miles an hour. These are torpedo boats or steamers built for speed only.

Sir Hugh Bell, president of the Iron and Steel Institute in London, recently predicted that within the next century vessels would cross the Atlantic propelled by wireless, and that power would be transmitted from Niagara Falls. This statement may seem wild, but it is probably no more ethan the idea of steam navigation seemed one hundred years ago.

Fulton was not the first to apply steam to navigation. A steam vessel had been tried on the Clyde in 1789, and by engineers named Rumsay and Fitch in American waters in 1786-87, but Fulton was the first to make a success of his vessel.

The first steamship to go out on the ocean was the Phoenix, a queer looking craft, but a marvel in her day. She was built by Fulton in 1809 and made a trip from New York to Philadelphia, starting on June 8 and arriving at her destination on June 17. She was a low, rakish looking craft, fitted with a small engine and rigged with two long masts on which sails were carried.

From the Clermont steam navigation began to be a success. Other vessels followed, and with improvements in model and in machinery speed was increased. The engineers then used steam as an auxiliary to a large extent and sails were carried on all vessels and used whenever possible. while the engines were used in calms or adverse winds.

From the river the steamers soon went out to sea and regular steam packet communication was established between coast ports. In 1819 the Savannah crossed the Atlantic.

She was built as a sailing ship to ply be tween New York and Savannah and was launched at Corlears Hook, New York, on August 22, 1818. She was then purchased by some Savannah merchants and fitted with steam machinery and paddle wheels The wheels were made to fold up so that they could be laid on the deck when not in

She left Savannah on May 26 and reached Liverpool in twenty-five days, using steam eighteen days. The log of this vessel still preserved, notes that several times during the voyage the wheels were taker in and laid on deck in thirty minutes.

Then the Savannah went to Cronstadt, and an effort was made to sell her to the Russian Government, but this failed and she returned to Savannah, taking fifty-three days for the voyage. There her machinery was taken out and she finished her days as a sailing vessel, finally being wrecked off the south coast of Long Island

The Enterprise, a British vessel 122 feet long, went from Calcutta to London in 113 days, ten of which were spent in stoppages. The voyages of the Savannah and the Enterprise settled the possibility of the use of steam at sea and the question that naval engineers next tackled was whether a ship could be built to cross the Atlantic depending entirely on her steam power It was a question really of fuel consumption The Savannah used pitch pine, and wood was for a long time the chief fuel for steaming purposes in this country.

It was not until 1888 that any real success was made in the way of crossing the Atlantic under steam. In that year two large vessels, the Sirius and the Great Western, were built. They started for this port within twenty-four hours of each other.

The Great Western was 286 feet long over ail and 205 feet long on the keel. Her breadth was 35 feet and draught 16 feet 8 inches. She displaced 2,800 tons. The engines had cylinders 78% inches in diamter by 7 feet stroke. The wheels were 28 feet 8 inches in diameter and 10 feet wide.

The Sirius was a much smaller vessel She had been built to ply between London and Cork and displaced only 700 tons. The Great Western made the voyage in

fifteen days. She averaged 208 miles a day and her highest run was 247 miles. ishe had started with 800 tons of coal on board and had nearly 200 when she arrived

The Sirius averaged 161 miles a day. He Fest run was 220 miles and her lowest 85 and she consumed 450 tons of coal, having used all she had by the time she reached

A CENTURY OF STEAM VESSELS | the harbor. The Great Western was kept | the Britannia, built in 1840. She was 270 | LITTLE CARIBOU AT SCHOOL on the service until 1863, making in all sixtyfour voyages, and her Lest time was 12 days 18 hours.

The Sirius was withdrawn from the service and her place taken by the British Queen, vessel that cost \$450,000 to build exclusive of her machinery, which cost \$120,000. She was 275 feet long, 37 feet 6 inches wide and 27 feet deep. Her paddle wheels were 30 feet in diameter.

She made the trip from Portsmouth to New York in 1830 in 141/2 days and the trip home in 181/4 days. The ill fated President followed and she was lost at sea

The first vessel of the Cunard Line was

OCEAN HOTEL'S EVOLUTION. Development of the Steamship Since the Clermont 100 Years Ago.

























PICTURES BY COURTESY OF THE RUDDER

268 were saved. The Pacific of this line left Liverpool in 856 and was never heard of again. The Adriatic was built and she was a finer ship than any yet built, but the losses of the line ruined it. The Great Eastern was a vessel built long before her time. She was too large and in trying to combine sailing, paddle wheels and screw propellers she proved a costly failure. 1834-P&O.Steamer.

She was started in 1852, and her dimensions were 680 feet long, 83 feet beam, or 113 feet over the paidle boxes, and 12,000 tons displacement. She was the largest vessel ever built until the Celtic came out in 1901. She could carry 1,000 passengers, 15,000

feet long and had an aggregate tonnage of

the passage in his "American Notes."

were made too with screw propulsion.

launched for the Cunard company in 1861.

was then termed "a huge levisthan."

Her total length was 322 feet, beam 51 feet,

depth 32 feet, draught 16 feet and tonnage

measurement, 3,443 tons. She carried 1,200

tons of coal and her engines developed

The hull was built of iron. She was

rigged with five masts and was driven by

The Great Britain crossed in 1845 in 14

finally stranded in 1886 at the Falkland

In 1849 the Arctic of the Collins Line was

built. She was 282 feet long, 32 feet depth,

45 feet beam and 20 feet draught. This line

soon had a good fleet of vessels, but was

unfortunate. In 1854 the French steamer

Vesta fan into the Arctic in a fog off Cape

Race and only forty-six persons out of

Islands and was broken up.

,500 horse-power.

screw propeller.

iaries to the steam.

tons of fuel and 5,000 tons of merchandise. The screw engines indicated 4,000 horsepower and the paddle engines 2,500 horse-She was launched in 1858 and made a trip to this port in 1859. A year after this sh

was laid up and was later used as an exhibit

on the Mersey and some years later broken

In 1870 the White Star Line, then known as the Oceanic Company, brought out the Britannic and Germanic, two vessels 468 feet long built of iron and fitted with compound engines driving screws. The day of the paddle wheel except for shoal draught waters had gone.

These engines developed 5,000 horsepower and the vessels carried 220 cabin and 1,100 steerage passengers and 150 in the crew. Their voyages took about eight days

ten hours. Since then improvements have been made steadily in ocean vessels, and now the huge floating hotels built of steel with engines of from 25,000 to 70,000 horse-power can cross the ocean in five days, and to do this they consume as much as 1,000 tons of

coal a day. BOYS STUDY ARCH. EOLOGY. Unusual Origin of the Museum at Phillips Academy, Andover.

Phillips Academy in Andover, Mass., is the only preparatory school in the world that possesses a fine archeological museum and a department of achaeology. It came

about in a rather unusual way. In November, 1895, a short article on mound exploration appeared in the Philadelphia Press. The article attracted the attention of Robert S. Peabody of Germantown, Pa., nephew of George Peabody, the

philanthropist. He began correspondence with the author and their acquaintance culminated in the founding of the department of archmology at Phillips Academy. The endowment was sufficient for the maintenance of the department and the erection of a beautiful ouilding suitable for museum purposes and containing a large lecture hall, a library and offices.

Mr. Peabody lived when a boy in the Valley Mr. Peabody lived when a boy in the Valley of the Muskingum River, Ohio, where there are many mound builder and Indian remains. He thus became interested in archæology, and with his own hands collected some 200 specimens on his father's farm. For years he spent much time in the field studying archæology at first hand and collecting specimens, and he employed experts to add to his collection.

In the beautiful building he erected at Andover his entire collection, numbering some \$8,000 specimens, was placed. Next to Mr. Peabody's gifts the largest accessions were received from Clarence B. Moore of Philadelphia, who has carried on explorations in Florida. Alabama and Georgia for the

in Florida. Alabama and Georgia for the last ten or twelve years. His donation gives the students of Phillips Academy a comprehensive idea of prehistoric times in Florida and is the best single exhibit in the

The academy instructors and their students have also made many fruitful ex-cursions in archeological fields, which have added numerous specimens to the collection. It now numbers nearly 60,000 specimens, which are divided into seventyone classes, representing nearly every known phase of the life and arts of early

known phase of the fire and ares of early man in America.

Of course Mr. Peabody's gift has greatly stimulated the study of archæology in the academy, and since the department was founded some 114 students have taken the course, which is sufficiently complete to give young men a pretty fair knowledge releving to the store are man here and to give young men a pretty fair knowledge relating to the stone age man here and abroad, though naturally the studies are not so technical or comprehensive as in the leading universities. But the academy has won so excellent a standing in this branch of study that it is constantly receiving letters from various parts of the United States and Canada asking for archaeologic information.

United States and canada assing to ologic information.

The academy has just assed a bulletin telling the story of the development of archeological study there and containing reports of its field excurisons in New Maxico. Ohio, Kentucky, Arizona and other regions. ollections and of the men at work in the

4,600. Charles Dickens made his first visit to this country on this vessel and described A CURIOUS SPECTACLE SEEN IN THE WILDERNESS. Builders then tried to outdo each other

in the size of the vessels they turned out and many costly experiments were made. Kindergarten at Which the Youngsters The Cunard Line was established, and the Were Taught to Jump So That They Could Keep Out of the Clutches of the early vessels of this line were similar in type to the Great Western, being about 250 Wolves in Winter—Curiesity of Caribou. feet long and having side wheels, which Copyright, 1907, by William J. Long.

grew in size with each ship, and fitted with Of all the curious things that I ever masts on which sails were carried as auxilstumbled upon unexpectedly in the big wilderness, the most interesting, to me, Builders experimented with iron vessels was a school for little caribou. That sounds and several small ones were constructed, odd, I know, but I am thinking of a school, and they were successful. Experiments not as a little red building at the crossroads containing one willing teacher and The Cunard Line was followed by the several unwilling pupils bending over their Collins Line and the Inman Line, and in books together, but as any place in this 1850 the New York and Havre Steamship big world where any one who knows a thing Company and the Vanderbilt Line were or two shares his crumb of knowledge established. The last paddle wheel steamer with any one else who is ignorant. If you to be built was the Scotia, which was accept this definition you will find your school everywhere in the woods, where While vessels were being developed for each year careful mothers lead their ignorthe Atlantic service on both sides of the ant little cubs and nestlings out into the ocean the British were active with vessels

for trade on the Pacific and other waters Do they teach their young, or is all the and the types built were in a way very simple knowledge of birds and beasts similar to those built for the Atlantic sera matter of mere blind instinct? That is vice, but all the vessels were of moderate one of the questions which naturalists size and used sails as auxiliaries to their are debating now, promulgating all sorts of interesting opinions from the background It was the Atlantic service that did most of the easy chair or the natural history to develop the steamship, though, and soon builders made big jumps in size and power. The Great Britain came out in 1842. She

Meanwhile the animal world outside is full of suggestive object lessons. Here is one, shown me by the caribou, from which one might be justified in forming a modest epinion of his own.

The animals I am speaking of now are woodland caribou-larger and more inter-esting animals than the barren ground caribou of the unwooded regions nearer the Arctic. In summer they live singly and far apart, rearing their young in deep forest seclusion.

days 21 hours, averaging 121/2 knots. She There each one does as he pleases, having was improved, made two more voyages and then stranded on the Isle of Man. She no herd and no herd laws either to protect or to hamper him. So when you meet a was not injured much, but put her backers caribou in summer he is a strange creature in financial difficulties, and later she was and has more unknown and curious wave put on the Australian service. Then she than when he runs with the herd in midwas changed to a sailing ship and was winter.

I remember a solitary old bull that lived on the mountainside opposite my camp one summer, who was a most interesting mixture of fear and boldness, of reserve and intense curiosity. After I had hunted him a few times and he found that my intentions were as peaceable as his own, he took to hunting me in the same way, just to find out who I was and what queer thing was doing.

Sometimes I would see him at sunse n a dizzy cliff watching for the smoke of my campfire or the coming of my cance And when I dived in for a swim about the island where my tent was, splashing to attract his attention, he would walk about in the greatest excitement and start a dozen times to come down; but always he ran back for another look, as if fascinated.

Again he would come down on a burned point near where I was fishing in my canoe and, hiding his body in the underbrush would push his antlers up into the bare branches of a withered shrub, so as to make them inconspicuous, and stand watching me. As long as he was quiet, it was im possible to see him there; but I could always make him start nervously by flashing a pocket glass, or flopping a fish in the water or whistling a jolly Irish jig. When I tied a bright tomato can to

te branc

woods all still.

o show off its powers.

as it proceeded.

ELEPHANT IN DRAMA.

First of the Big Beasts Exhibited in the

Country Was a Star Performer.

With the modern circus the trained ele

phants are as inseparable in the minds of

most patrons of the tented arena as the

graceful riders themselves, yet the first

this country was not connected with a

circus, says the Philadelphia Public Ledger.

but made its debut as a theatrical star.

This famous and now forgotten animal

was the heroine of a drama specially written

It was in January, 1831, that this marvel-

lous pachyderm, heralded with a blast of

press agents' notices equalled only by the

announcements some years later for the

to American audiences. As the beast was

landed in New York that city naturally

had the first taste of its histrionic powers

Two Philadelphia managers fought for

possession of the "star," and the newspapers

and cartoonists of the time kept the public

informed of every phase of the quarrel

who the previous year had made a big

d'Jick" in London and the English prov-

While the elephant was performing a three

The Elephant of Siam and the Fire Fiend,

lescribed as a "magnificent Eastern drama,

Lamb & Coyle, managers of the Chestnut

Street Theatre, sent an agent over to the

neighboring city to secure the prize for their

Unfortunately, in their haste to outstrip

their rivals the Chestnut Street managers

overstepped the mark. Their agent had

about the business so hurriedly, but cured the elephant by signing a con-

oming of Jenny Lind, was first shown

string one day, and set it whirling around my head, and set my handkerchief for a flag on the end of my trout rod, then he could not stand it another minute, but came running down to the shore, to stamp and fidget nervously, and scare himself with twenty alarms while trying to make up his mind to swim out and satisfy his burning desire to know all about it. But

I am forgetting the caribou schools.

Wherever there are barrens—treeless plains in the midst of dense forest—the caribou collect in small herds as winter on, following the old gregarious pleases any more, for all gregarious creatures seem to have certain regulations which all must know and respect, but of which the young are manifestly ignorant; and it is for this winter life together, when

which the young are manifestly ignorant; and it is for this winter life together, when laws must be known and the rights of the individual be laid aside for the good of the herd, that the young are trained.

One afternoon in late summer I was drifting sliently down the Toledi River in the New Brunswick woods casting for trout when a movement in the bushes ahead caught my attention. A great swampy tract of ground covered with grass and low brush spread out on either side of the stream. From the cance I made out two or three waving lines of bushes, where some animals were making their way through the swamp toward a strip of big timber, which formed an island in the middle. Pushing my cance into the grass, I made for a point just astern of the nearest quivering line of bushes. A glance at a bit of soft ground showed me the trail of a mother caribou and her calf. I followed stealthily, the wind being in my favor. They were the two property and I took years good raise.

the wind being in my favor. They were not hurrying, and I took very good pains

not hurrying, and I took very good pains not to alarm them.

When I reached the timber and crept through the fringe of underbrush there were the caribou, five or six mother animals and nearly twice as many little ones, which had evidently just come in from all directions. They were gathered in a natural opening, fairly clear of bushes, with a fallen tree or two which served a good purpose later. The sunlight fell across it in golden bars, making light and shadow to play in; all around was the great marsh, giving protection from enemies; dense

go about the elephant by signing a contract.

The play in which the elephant took part was of no dramatic importance. There was some chance for the comedians and the elephant, and it is presumed both made the most of it. There were processions in which the elephant appeared and in one scene the animal tossed off several bottles of mineral water at a "magnificent banquet." Apart from this the play was ingeniously constructed to give the great beast a real part to play.

In the first act the elephant enters as one of the conspirators is about to murder the Prince by placing him in the tomb of the departed monarch, and, according to the stage directions, "by a roar, bars their progress." He also "loosens the stone which closes the vault," and thus saves the selects the rightful heir to the throne. He "advances, takes the crown off the head of Korrassan (the usurper) and places it to the throne of the man of the lase of the selects it con the head of Almanzor." He also to play in; all around was the great marsh, giving protection from enemies; dense underbrush soreened them from prying eyes—and this was their schoolroom.

The little ones were pushed out into the middle, away from the mothers, to whom they clung instinctively, and were left to get acquainted with one another, which they did very shyly at first, like so many strange children. It was all new and curious, this meeting with their kind, for till now they had lived in dense solitudes, each one knowing no living creature save its own mother.

its own mother.

Some were timid and backed away as far as possible into the shadow, looking with wild, wide eyes from one to another of the little caribou and bolting to their mothers' sides at every unusual movement. Others were bold and took to butting at

the first encounter.

But careful, kindly eyes watched over them. Now and then a mother caribou would come from the shadows and push a little one gently from his retreat under a bush out into the company. Another would push her way between two stubborn little beads that lowered at each other threateningly and say with a warning swing of her head that butting was no good way to get along together.

way to get along together.

I had once thought, watching a herd
of caribou on the winter barrens, that they
are the gentlest of animals with one another.
Here in the little school in the heart of the swamp I found, perhaps, the explanation of things.

of the next act the "fire fiend" and conspirators generally are after him. They finally capture him and place him in a chest to smother quietly. But the faithful sacred elephant enters, "approaches the chest and lifts up the lid, when Almanzor is discovered almost expiring." In order to revive him, "the elephant gathers oranges from the trees which surround the spot and presents them to the Prince." The faithful beast then "ploks up the trunk of a tree and strikes a gong," thus giving an alarm. It is not difficult to see the finale. The Prince is saved, the con-More than an hour I lay there and watched, More than an hour I lay there and watched, my curiosity growing more eager every moment, for most of what I saw I could not comprehend, having no key nor understanding why certain youngsters who needed reproof according to my standards were let alone while others were kept moving constantly, and still others were led aside often to be influenced, apparently, by their mothers. But at last came a lesson in which all joined and which could not be misunderstood, not even by a man. It was the jumping lesson.

understood, not even by a man. It was the jumping lesson.

Caribou are naturally poor jumpers. Beside a cleer, who often goes out of his way to jump a fallen tree just for the joy of using his springy muscles, they have no show whatever, though they can travel much further in a day and much more easily. Their gait is a swinging rack or pace

from which it is impossible to jump, and if you frighten them out of their pace into a gallop and keep them at it they soon grow exhausted. Countless generations on the far northern wastes, where there are no trees and no need of jumping, have bred this habit and modified their muscles accordingly.

AT THE BOTTON OF THE SEA. FINICKY TROUT OF CANADA

Signts and Sensations Which Await the Deep Ocean Diver.

The bottom of the sea is a region full of mystery for all but the very few who either MEETS WITH SUCCESS.

Most of the little caribou took to the sport

cordingly.

But now a race of caribou has moved south into the woods, where great trees lie fallen across the way and where, if Megaleep is in a hurry or there is a wolf behind him, jumping is a necessity. Still he does not like it and avoids it whenever continue. have made diving their profession or have put on the helmet in the cause of science. One of the latter class furnishes to the Lady's Fealm some very curious photographs which he himself took under water. He says that such pictures can be made possible.

The little ones, left to themselves, would probably never jump. I have watched them in a score of different places, and in contrast with the fawns of rod deer they always try to orawl under a windfall or to trot around it. And this is another thing to overcome and another lesson to be taught in the caribou echool.

As I watched them the mothers all came out from the shadows and began trotting. with any excellent camera having an unusually luminous optic by inclosing it in a

watertight case, capable also of resisting

the pressure of the water. The submarine scenery, as he calls it, is never still enough to give satisfactory results from a time exposure, but instantaneous pictures are made by the light given by fireworks burning under a crystal bell glass filled with compressed oxygen. The best results are obtained by this method when the waters are absolutely dark at

As I watched them the mothers all came out from the shadows and began trotting around the opening. The little ones followed naturally, each keeping as close as possible to its own mother's side. Then the cows went faster, the calves were left in a long line stringing out behind.

Suddenly the leader veered in to the edge of the timber and went over a fallen tree with an easy jump. The cows followed splendidly, rising on one side, falling on the other, like choppy gray waves racing past the end of a jetty. But the first little one dropped his head obstinately at the tree and stopped short. The next one did the same thing, only he ran his head into the first one's legs and knocked them out from under him.

The others whirled, bleating and humping their backs, and scampered around the The effect of such a light is wonderful. The bottom of the sea looks like fairyland. Hoets of fishes, attracted by the light, gleam like gold and silver, while the transparent jellyfish move slowly through the glowing water like bells of opal.

The beauty of the sight is increased by an infinite number of minute gas bubbles which cover the seaweed, and in the illuminated water have the appearance of innum their backs, and scampered around the tree to their mothers, who had turned now erable diamonds and myriads of delicate pearls.

tree to their mothers, who had turned now and stood watching intently to see the effect of their lesson. Then it began again.

It seemed to me like true kindergarten teaching, for, under guise of a frolic the calves were being taught a needful lesson; not only to jump but, far more important than that, to follow a leader, and to go where he goes without question or hesitation. For the leaders on the barrens, when the snow is deep and the wolves are out, are wise old caribou that make no mistakes. On going down into the sea the diver soon enters a kind of twilight, which envelops him like a thick mist. The sky and the clouds. which may be seen at the beginning of the dive, soon fade and disappear. The sun alone remains visible to a great depth, like a small reddish disc through the green and blue films of water.

At the bottom objects seem nearer and arger than in reality and appear under a color other than their own; for the rays of light traverse a thickness of green and blue water which absorbs them unequally; bule water which absorps them unequally; as the red rays, for instance, are extinguished long before the blue, a white rook appears blue, a red animal black.

Another phenomenon, which never fails to excite surprise at first, is to see night setting in completely at the bottom at the same moment in which at the surface it is broad day.

Most of the little caribou took to the sport very well, and presently followed the mothers over the low hurdles. A few more were timid; and then came the most intensely interesting bit of the whole strange school, when a little one would be led to a tree and butted from behind till he took the jump.

There was no "consent of the governed" in that governing. The mother knew, and the calf did not know, just what was good for him. broad day.

broad day.

In illustration it is customary to depict divers walking upright on the bottom of the sea; it is not so in reality.

Just as a cyclist bends over his handle bar in order to overcome the resistance of the wind, the submarine walker is obliged, if he wishes to advance, to bend stoutly forward. Besides, his body takes this elanting position instinctively, which he could not assume on land without falling.

At first, you are not able to regulate your

in that governing. The mother knew, and the calf did not know, just what was good for him.

It was this last lesson that, unfortunately, broke up the school. Just in front of my hiding place a big dead stub had fallen out into the opening. A mother caribou brought her calf up to this and leaped over, expecting the little one to follow.

As she struck the ground near me she whirled with a terrible start and stood like a beautiful statue, her head pointing in my direction. Her eyes were bright and very large, her ears set forward, her nostrils spread wide to catch every tainted atom from the air. A moment she stood, as if carved out of gray rock: not a muscle, not a nerve quivered.

Then she turned and glided silently away, the little one close at her side, looking up and nudging her frequently with his muzzle as if to whisper, "What is it? What is it?" but making no sound whatever.

There was no signal given, no alarm of any kind that I could understand, but that mysterious feeling of danger leaped through the air from mothers to little ones, and the lesson stopped instantly. The caribou glided away like shadows. Over across the opening a bush swayed here and there a leaf quivered as if something touched its branch.

Then the school room was empty and the At first, you are not able to regulate your motions according to the resistance to be overcome, or you are inclined to overrate overcome, or you are incined to overtake it, and you impart to your action a sudden-ness more detrimental than useful, and which fatigues to no purpose. On trying to seize a plant or a zoophyte, the fiand either seeks it where it is not or crushes it roughly; and, if one endeavors to surmount an ob-stacle, the effort you make carries you four times as bigh, as necessary.

stacle, the effort you make carries you four times as high as necessary.

If water as a medium has its drawbacks, it has its advantages, too. The diver can regulate its density at will and effect downright feats of strength. Thus it is child's play to him, merely by using his finger ends and his toes, without danger of falling, to climb up or down perpendicular rocks or dizzy precipioes; to remain under water or rise like a balloon rapidly to the surface. It is generally believed that marine plants keep perfectly upright in the midst of the water, and a celebrated writer has said: "At the bottom of the sea the vertical reigns." This assertion is incorrect. The seaweeds have never appeared to me to affect this position in a more marked degree Then the school room was empty and the

affect this position in a more marked degree than our land plants do. Like the latter, in calm places they spread out and bend their

An inexperienced observer having descended to marine ground might believe that the life there is comprised in the fish that pass rapidly before the windows of his helperforming elephant to be introduced to met and the crustaceans that escape from under his feet; but he who stops and looks closely is astounded by the number and di-versity of the beings that hide under every one and swarm on the rocks or among the One has not to walk long on the bottom

of the sea before meeting with objects re-calling the things of the surface and the treachery of these billows, so calm in ap-pearance. Now it is a long chain trailing pearance. Now it is a tong chain training across the seaweed, now an anchor or propeller half buried in slime, a chest, a barrel, a piece of a mast or rigging.

Covered with a layer of plants or mollusives, these wrecks have taken the general color of the surrounding soil, and only their forms and them. But sometimes a great dark

reveal them. But sometimes a great dark wall all at once becomes visible through the transparent mass, and soon one dis-tinguishes in it the tall hull of a shipwrecked

vessel. If the sinking of the vessel has been sudden, if it is of recent date, if some large breach enables one at the same moment with the luminous rays of the submarine lamp to peer in the side of the ill fated vessel, one often recoils in horror from the scenes John Gallot, a French animal trainer, success with his elephant named "Mile. nces, brought the beast to this country. weeks engagement in New York city in

one often recoils in horror from the scenes which await one.

The glaucous color of the place and its sinister calm give such intensity to these mournful pictures that in spite of oneself one flies from it with the mad desire to ascend forever to the surface, detesting the pitiless sea, creator of such horrors; but at two paces, see how one's eyes fall on the radiant forms of the lives it supports, and the beauty of its living makes one forget the ugliness of its dead. neglected to sign an agreement with the proprietor of the "star." Maywood, the manager of the Arch street house, did not go about the business so hurriedly, but

the ugliness of its dead.

Outside the professional divers who descend to the bottom of the sea for definite work and have no leisure in which to conemplate the submarine world, very few people have donned the diving dress and people have donned the diving dress and braved the dangers of compressed air. In the future it will be so no longer. The steel armor victoriously resisting the water pressure throws open wide depths till now

LIVELY LOBBYING.

When 10,000 Telegrams Poured Into the Senate in Two Days.

Lobbying is like driving cows. There are times when it is best to say, "Suh boss! Suh boss! Come bossy! Nice bossy!" and to shake the peck measure invitingly, says Gilson Gardner in Success.

And then there are other times when the only thing to do is to get behind and holler and throw sticks into the air. At heart Congressmen are timid creatures and a big noise is often mistaken by them for big danger. It was the "big noise" method that was

adopted by the railway brotherhoods to shoo" the Senate back from passing an anti-pass bill which would cover railway anti-pass bill which would cover railway employees and their families. A representative of the organization who sat daily in the reserved gallery sent out a telegram of warning.

The response was spectacular and historic. It is known as the "rain of telegrams." They began to come early in the day. They continued until dark, and the dask of every Senator was riled with

grams. They began to come early in the day. They continued until dark, and the desk of every Senator was piled with scores of personal entreaties. All that night they kept on caming.

The Western Union Company was swamped, and Superintendent Collins called on Philadelphia and Baltimore for operators. All that night and the following day the telegrams poured in. It is estimated that there were no less than ten thousand, and the tolls on them amounted to \$30,000. d to \$30,000.

And in the Senate Democrate vied with

And in the Senate Democrats vied with Republicans for a chance to get the floor and to offer an amendment exempting the noisy class. It was never intended, they explained, that railway employées should be made to pay their fares; nor yet their families; nor railway doctors, nor their families; nor the sick, nor the indigent, nor the homeless, nor any man looking for a job in the grain fields: And so the Senate framed up that monumentally feelish list of exceptions to an otherwise good law.

Anglers Who Had Luck Only when They Made the Fish Jump Out of Water -Lean Ham a Helper-Trout Caught at

Great Depth by a Spoon Dropped In. LACHINE, Canada, May 22.- Two anglers fishing the Fallen-in Shanty Pool on the Kazubazua were mightly disgusted over the sleepiness of the trout. That fine fish abounded was evident. Every now stathen there was a flash of gold or silver in the foam at the upper end, and whenever there was a cessation of the little catspaws of wind which at intervals ruffled the surface it was possible to look down upon scores of reticulated backs slowly

moving about the lower depths. Yet all kinds of flies were tried in vain for not a single fish would do more than rise languidly to examine them from a safe distance. At last in sheer desperation worms were tried. These also failed to attract. One of the fishermen, however. paused to utter a few appropriate comments upon the sport, allowing his tait to dangle about a foot above the water.

Then the fun began. One after another three glorious fish dashed at the swinging worm, the third. a two pound fish, bearing it off in short lived triumph. The second angler, quick to take a hint, adopted similar tactics and was fast to a sister fish before the other had succeeded in leading his fish to net.

A dozen good trout-all they neededwere taken just that way as quickly as the fish could be played and killed. On succeeding days they had the same experience. The trout, always capricious, had chosen to take their food literally on the jump, and there was nothing to do but to humor them.

There was another occasion when the writer was the only fortunate one of the party on a lake not far from the same pool. Not one of the others could get a rise, while every attempt of his meant a good fish fast to a miserable wreck of a fly, showing but the merest fragment of a guinea fowl's feather. Until the mouthing of the ravenous trout had mauled the hook perfectly bare they insisted upon taking just that one bait. Nor after that had new specimens of the successful fly nor any of the others any attraction.

A few days ago it was noticed on a northern lake that the occupants of one cance caught double the number any of the others could secure. At last investigation showed that the guide had placed the eye of a fish upon the hook of his tail fly. Then every one took trout equally well, for experience proved that it did not matter what fiv vas used so long as an eye was stuck upon each hook.

Yet after a whole night's thunderstorm not a single fly would regard that bait nor anything else but a scarlet ibis used as a dropper. It was only when a gentle southwest wind slightly rippled the lake that the fishing was really good and the trout exhibited willingness to attack.

There is a beautiful little sheet of water near the Pemichongon, where large bass and chub may be taken at any time. One keen old farmer fisherman used also to get magnificent trout, some of them weighing up to nine or ten pounds. No one else could ever catch sight of any of them.

For years he refused to disclose his secret At last a little lad noticed and made mention of the antics of the old fisherman in a grove of second growth Norway pines. He was racing about like one possessed, climbing the trees, jumping and stooping, all the time brandishing a little net on a stick.

It was a well known naturalist, then fishing in the district, who took up this clue and discovered that one of the saw flies, probably Lophyrus pini, which is often found about cone bearing trees, was the tone fisherman's killing bait. The unraveller of the mystery prepared a clever artificial representation of the natural fly, which is manufactured solely for club whose members use it with constant success in that little lake.

Trolling with flies from a boat is a favorite plan in some of the Maine trout waters. In the Moosehead district one man invariably got the largest fish, and he was also by far the luckiest fisherman of the season. A wideawake youngster caught the gleam of metal on the cast as the for tunate one made a sharp turn with his canoe when coming in for the night. Next day several of the campers were using tiny spoons with their flies. They met with some, but not very conspicuous, success. Evidently the whole of the secret had not been discovered. However, before leaving the angler, like a true sportsman. gave the others a quiet tip to put the tinies scrap of boiled lean ham upon the hoof of the little spoon. That made all the

There are many lakes in the northern woods into which no fisherman ever throws woods into which no insuerman eyer throws a line, under the supposition that no fish are to be found therein. An inquisitive sportsman once let down a heavy spoon into such a lake in order to plumb its depth. He got down some forty feet without finding bottom and was reeling in his line when to his utter amazement he felt a fierce ture.

The next moment his reel was singing The next moment his reel was singing with that steady whirr which tells of a heavy fish, and the strain increased until the man wondered what he had taken hold of. It was not a long fight, however. The fish never evinced any desire to come near the surface and was pulled up comparatively helpless and worn out. It was black, with a deep red belly, white tipped fins, scarcely any signs of spots, and of prodigious thickness and depth. Its weight was thirteen pounds.

Two or three others of similar appearance, but of smaller size, have been taken in the same manner at great depth. All

in the same manner at great depth. All kinds of bait have been tried without effect, and nothing but the common spoon twirling upward has any attraction for the black ionsters. In the Thirty-one Mile Lake, which is a

In the Thirty-one Mile Lake, which we a famous place for bass and lugge and large pike, good sized speckled trout have been taken by flies resembling the slender blue June dragon fly, though probably none of the scores of clubmen who use nearly all kinds of flies and baits upon its water ever suspects their presence.

PAPER PAILS FOR MILK. Latest London Contrivance for Securing Pure Milk Supply.

For years London's milk supply has been blamed by medical men and health officers for a great deal of the infant mortality. Now the dairy companies are to deliver milk at the doors of houses in paper palts or pitchers, which are said to be absolutely

proof against germs and water. The paper pails are being made at a new factory at the rate of 50,000 daily, but they will require to be turned out at the rate of some millions daily if the demand is to be

some millions daily if the demand is to be met.

These milk pails, made from wood pulp, can, of course, be used only once, says What to Eat. But they will be cheaper than metal pails, pitchers, or glass bottles, for one reason, because all labor of cleaning and sterilizing will be saved.

The pail is a simple contrivance, twelve times lighter than the ordinary milk can, is strongly made and is finished off, after being rendered waterproof, by being sterilized in a furnace heated up to 500 degrees Fahrenheit. Every pail has a close fitting flanged cover which can be quickly adjusted, and when excel, effectually seals the milk from any outside influence.

Fought Duel From a Chair. From the Strand Magazine.

an alarm. It is not difficult to see the finale. The Prince is saved, the con-spirators are captured and the elephant is worshipped.

head of Korrassan (the usurper) and places it on the head of Almanzor." He also "takes up Almanzor with his trunk and bears him off in triumph."

The rightful heir, however, is not yet out of the woods. Through the greater part of the next act the "fire flend" and considered the control of the control of

Sainte-Beuve got an excellent advertisement out of a duel fought on a wet day by insisting upon holding his umbrella up with one hand while he fired his pistol with the other. He was willing, he courageously said to take the risk of being shot, but he must he accused from taking the greater risk of catching

cold.

The duel which Benjamin Constant, who suffered from gout, fought sitting in a Bath chair may have been of somewhat similar character, Honor in that case was declared satisfied when the Bath chair was hit.